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R11/R13

Code: 1G184

IV B.Tech. II Semester Regular & Supplementary Examinations April 2017

Virtual Reality

(Computer Science and Engineering)

Max. Marks: 70

Time: 3 Hours

Answer any **five** questions

All Questions carry equal marks (**14 Marks** each)

1. a) With a neat diagram, explain the components of a VR system 7M
b) Write a brief note on the evolution of commercial VR technology 7M

2. a) Compare the features of AC and DC Magnetic Trackers 7M
b) Explain how Trackball acts as Navigation and Manipulation Interface 7M

3. a) Outline the impact of Convolvotron in sound systems 7M
b) Describe the features of Tactile Feedback Interfaces 7M

4. a) Explain about various Virtual Object Shapes in Geometric Modeling 7M
b) Write a brief note on Haptic Texturing 7M

5. a) Summarize the effect of VR simulations on the users 7M
b) Explain the importance of VR and its impact on society 7M

6. a) Describe about various medical applications of VR 7M
b) Explain how VR applications are used in Navy 7M

7. a) Outline the strengths and criticisms on Java 3D in Game Programming 7M
b) Discuss how the shapes with curves and lines are created using lathe 7M

8. a) Write a brief note on Alien Sprite 7M
b) Explain how Animation sequence is added and processed in 3D Sprites 7M

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R11/R13

Code: 1G185

IV B.Tech. II Semester Regular & Supplementary Examinations April 2017

Human Computer Interaction
(Computer Science and Engineering)

Max. Marks: 70

Time: 3 Hours

Answer any **five** questions

All Questions carry equal marks (**14 Marks** each)

1. a) What is good design? Write the importance of good design 7M
b) Discuss the chronological history of the Internet 7M
2. a) Differentiate between Graphical User Interface and Web User Interface 8M
b) State and explain various principles in designing the Xeroxstar 6M
3. a) How Psychological and Physical characteristics of users affect their performance with a system 7M
b) Write about design standards and give their guidelines 7M
4. a) Elaborate technological considerations in Interface Design 7M
b) Explain Intranet and Extranet design guidelines 7M
5. Define Menu's Structure? Illustrate most common structures of Menu's with neat diagrams 14M
6. a) What are Message Box Controls? Explain 7M
b) Describe Instructional messages? Give Instructional interaction Terms 7M
7. What are the Specification Methods? Explain 14M
8. Explain Direct – control and Indirect – control pointing devices 14M

Hall Ticket Number :

R11/R13

Code: 1G187

IV B.Tech. II Semester Regular & Supplementary Examinations April 2017

Software Testing Methodologies

(Computer Science and Engineering)

Max. Marks: 70

Time: 3 Hours

Answer any **five** questions

All Questions carry equal marks (**14 Marks** each)

1. a) Explain the differences between Software Testing and Software Debugging 7M
b) What is Structural Bug? Explain about different categories of structural Bugs 7M
2. a) "Nested loops are problematic areas for software Testing", Justify with an example 5M
b) Discuss about Control Graphs, and also explain different factors to consider while doing the path testing 9M
3. a) Explain about role of Inspection and Reviews in Software Testing Process 7M
b) Discuss about different anomalies may encounter, while defining the Data Flowcharts 7M
4. a) Define Domain Testing? Describe about limitation of Domain Testing. 7M
b) Explain about Complete and Systematic Boundaries. 7M
5. Discuss about the steps involved in Node-by-Node removal process with help of an example. 14M
6. a) How can we form specifications into sentences? Write down different phrases that can be used for words? 7M
b) Explain about the procedure to determine paths in domain in Logic based Testing 7M
7. a) What are the principles of State based Testing? Discuss about advantages and disadvantages 7M
b) Discuss about types of Bugs that can be appear in State Graphs 7M
8. Discuss about Graph Matrices and its applications 14M

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R11/R13

Code: 1G181

IV B.Tech. II Semester Regular & Supplementary Examinations April 2017

Artificial Neural Networks

(Computer Science and Engineering)

Max. Marks: 70

Time: 3 Hours

Answer any **five** questions

All Questions carry equal marks (**14 Marks** each)

1. Compare conventional computers with Biological Neural Networks? 14M

2. Explain about Synaptic dynamic models 14M

3. Distinguish between pattern association, pattern classification and pattern mapping tasks. 14M

4. a) Give two examples of linearly inseparable problems 7M
 b) Distinguish between multilayer perceptron and a general multilayer feed forward neural network. 7M

5. a) What is the Hopfield model of a neural network? 7M
 b) Explain the differences between discrete and continuous Hopfield models in terms of energy landscape and stable states. 7M

6. Explain the three different methods of implementing the feature mapping process. 14M

7. a) What is an associative memory? 7M
 b) What are the requirements of an associate memory? 7M

8. What are some direct applications of the principles of neural networks? Why are they called 'direct' applications? 14M

Code: 1G182*IV B.Tech. II Semester Regular & Supplementary Examinations April 2017***Design Patterns**

(Computer Science and Engineering)

Max. Marks: 70

Time: 3 Hours

Answer any **five** questionsAll Questions carry equal marks (**14 Marks** each)

1. a) What is a Design Pattern? 4M
b) List the strategies to select and use a design pattern given a problem. 10M
2. a) Design a SalaryCalculator interface that declares methods for calculating salary for different designations. Design and implement two implementer classes — Programmer and office Assistant — to calculate the salary for programmer and office assistant respectively. Assume programmer has basic pay, HRA and DA whereas Office Assistant are daily wages. 10M
b) Differentiate between Abstract Parent class and Interface 4M
3. a) Explain how Factory Pattern instantiates an appropriate class from a class hierarchy? Illustrate. 7M
b) How the Builder pattern provides transparent object creation? 7M
4. a) How Composite pattern allows uniform reference between terminal and non-terminal nodes? Explain with FileSystemComponent example. 10M
b) Differentiate between Internal versus External Iterators. 4M
5. a) Explain the Façade pattern with an example that accepts customer details, validates them and saves as an appropriate data file. 10M
b) Explicit the mechanism that Java uses to explicitly release the Object Resources. 4M
6. a) Using State pattern explain how the states are modelled in a business account at a bank with the overdraft facility. 9M
b) How Strategy pattern vary from State pattern. 5M
7. a) Explain the Template Method using the example of checking the validity of a given credit card, 8M
b) Create a FileReader utility class with a method to read lines from a file. 6M
8. a) Which pattern suspend its execution until the object is in a state that makes a required precondition true? Explain. 8M
b) Design and implement a database connection class as singleton. 6M
